"a2 25. (New) The polyether of Claim 11, wherein g is from 44 to 1,000,000.

SUPPORT FOR THE AMENDMENT

Support for the above amendment and the newly added claims is found throughout the specification and the originally-filed claims. No new matter is believed to be introduced by the above amendment.

REMARKS

Claims 1-5 are canceled. Claims 12-25 are new. Claims 6-25 are pending. Favorable reconsideration is respectfully requested.

At the outset, Applicants thank the Examiner for helpful comments during the brief discussion of the present application held on June 17, 2003, which is summarized and expanded upon below.

The rejection of Claims 1-5 under 35 U.S.C. § 101 over Claims 1-5 of U.S. Patent No. 6,417,333 is obviated by the cancellation of these claims. Accordingly, withdrawal of this ground of this rejection is respectfully requested.

The rejection of Claims 6-9 and 11 under 35 U.S.C. § 103(a) over Yu is believed to be obviated by the above amendment combined with the remarks below.

Yu discloses, at best, polyether macromer having styryle-functional head group and hydroxy group at the terminal positions thereof. Further, Yu discloses part of the polyether as an alkylene oxide and glycidyl ether, monoolefinically unsaturated alcohol (see column 3). Polymerization is disclosed in Yu as being effected with a cationic initiator such as oxonium salt and a catalyst. Yu fails to disclose the use of any rare earth element and specifically states that the molecular weight of the polyether macromer is 10,000 or less. Therefore, the

 bkr comment re scope w/ claims

conventional catalyst described by Yu could not possibly proceed about a polymerization degree of 150 or larger as claimed. To support the Applicants' argument, Applicants respectfully submit the attached literature, Polymer Chemical Volume 17. 179, page 175-177 not in English to support this issue. It is clear that the acidic catalyst of Yu is such as a catalyst described therein which does not solve the needs in order to obtain a polymerization degree of 150 or larger. In contrast, the claimed polyether is made from a polymerization catalyst via ring-opening-polymerizing at least one substituted epoxide in the presence of a reducing compound and a rare earth metal compound to obtain a high polymerization degree.

Since Yu fails to disclose or describe a process by which their disclosed polyether may obtain a high degree of polymerization due to the inefficiency of the catalyst disclosed therein, Yu fails to disclose or suggest the claimed invention. This is because the catalyst disclosed by Yu is incapable of obtaining the claimed polyether. Accordingly, withdrawal of this ground of rejection is respectfully requested.

The rejection of Claim 10 under 35 U.S.C. § 103(a) over Kistner is believed to be obviated by the above amendment and the remarks below. Kistner discloses, at best, a polymer of glycidyl ether having a silane compound having a silicon and with a hydrolyzable alkoxy group. Kistner further discloses that polymerization is expected at the silicon atom in addition to the site of the epoxy. No polyether having siloxysilyl group as a side chain can be obtained by the process disclosed in this reference. Further, Kistner fails to disclose a polymerization of the polymer via any rare earth element compound.

In direct contrast, the claimed polyether compound contains a siloxysilyl and two or more silicon atoms. Further, the claimed polyether compound is obtained, in part, as a product of a catalyst formed from a rare earth element compound. As discussed above, it is apparent that when polymerizing the claimed polyether according to the present invention, a

high polymerization rate is obtained.

Since the process according to Kistner fails to disclose a polyether having siloxysilyl group in two or more silicon atoms that may be obtained using a rare earth element compound, Kistner fails to disclose or suggest the claimed invention. Accordingly, withdrawal of this ground of rejection is respectfully requested.

The rejection of Claims 6 and 11 under 35 U.S.C. § 103(a) over JP 07109351 (JP '351) is believed to be obviated by the above amendment combined with the remarks below.

JP '351 discloses, at best, a polymer having a fluoroalkyl-aryl. Further, the number average molecular weight is only 1,000 indicating that there is low polymerizability which is assumed to be due to the lack of a polymerization catalyst containing a rare earth element compound.

In direct contrast, the present invention relates to a polyether compound having a fluoroalkyl-oxyalkylene. Such a glycidyl ether monomer can be polymerized only with a rare earth metal as the catalyst and a reducing compound. Since JP '351 shows a polymer having a fluoroalkyl-aryl, JP '351 fails to disclose or suggest the claimed invention. Further, since JP '351 fails to disclose a polymer polymerized with a rare earth metal compound and a reducing compound, JP '351 cannot possibly obtain the high polymerization rate of the claimed invention. Therefore, JP '351 fails to disclose or suggest the claimed invention. Accordingly, withdrawal of this ground of rejection is respectfully requested.

In support of the above-mentioned arguments which rely heavily on the fact that all of the prior art references relied upon by the Office disclose a convention catalyst which does not contain a rare earth metal compound and a reducing compound; thereby failing to provide the claimed polyether at such a high polymerization rate, Applicants file herewith an executed 132 Declaration signed by Seiichi Miyanaga. The 132 Declaration discloses comparative data

examples A-1 to A-6 which parallel Examples 1, 4, 5, 6, and 8 of the originally-filed application. The only difference between the Comparative Examples A-1 to A-6 is that the claimed catalysts are replaced by conventional catalysts used the prior art references relied upon by the Office in the outstanding Office Action. Comparative Example A-1 and A-2 fail to polymerize and yield any polyether whatsoever. Comparative Examples A-3, A-4, A-5, and A-6 result in a yield of 37%, 62%, 0%, and 0%, respectively. Further, Comparative Examples A-3 and A-4 produce a product having a Mn of 4,500 and 9,000, a Mw of 70,000 and 210,000, and a C of 18.5 and 102, respectively.

In light of the data presented in the 1.32 Declaration compared to the corresponding data originally filed in the specification, it is clear that the conventional catalyst used by the prior art references fail to provide a polyether having a high polymerization degree.

In light of the above, it is clear that all of the methods of polymerization disclosed by the prior art references fail to disclose the claimed invention because they fail to disclose the process by which polyethers disclosed therein may be obtained at a higher polymerization rate. Therefore, none of the prior art cited against the present claims could possibly disclose or suggest the claimed invention. Accordingly, withdrawal of all rejections is respectfully requested.

Applicants respectfully submit that the present application is now in condition for allowance. Favorable reconsideration is respectfully requested. Should anything further be required to place this application in condition for allowance, the Examiner is requested to contact the undersigned by telephone.

Respectfully submitted,

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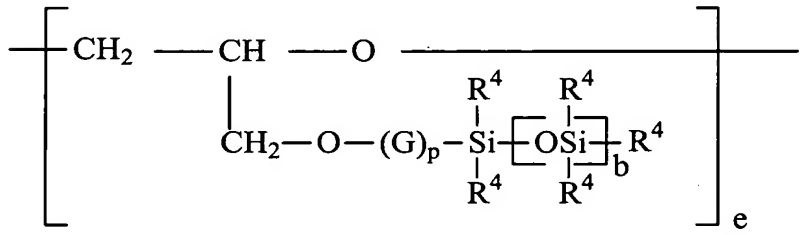
Marked-Up Copy
Serial No: 10/082,059
Amendment Filed on: HEREWITH

IN THE CLAIMS

Claims 1-5 are canceled.

Please amend the claims as follows.

--10. (Amended) A polyether represented by the formula (VII):



(VII)

wherein

[R^4, G, b and p represent the mean as defined in claim 4]

all of plural R^4s are same as or different from each other, and each of plural R^4s represents a hydrocarbon group which may have a substituent and which has 1 to 30 carbon atoms or represents a siloxy group which may have a substituent and which has 1 to 200 silicon atoms,

G represents an alkylene group, which may have a substituent and which has 1 to 20 carbon atoms, or an arylene group

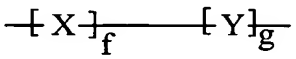
b represents a number selected from 1 to 500 as an average value of plural numbers or

represents an integer of 1 to 20 as a single number, and

p represents a number selected from 0 and 1, and

e represents a number being 5 or more on the average.

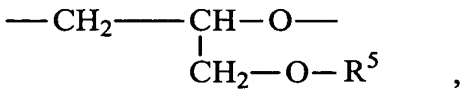
11. (Amended) A polyether represented by the formula (VIII):



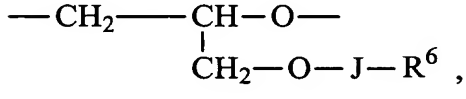
(VIII)

wherein

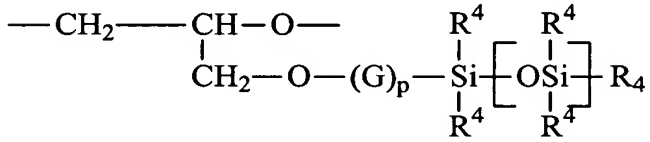
X represents



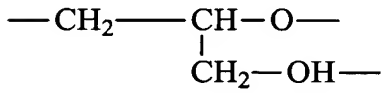
,



,



or



in which R^5 represents a hydrocarbon group which may have a substituent and which has 8 to 50 carbon atoms [R^5 represents the mean as defined in claim 6],

R^6 represents a fluoroalkyl group having 2 to 30 carbon atoms,

J represents an alkylene group having 1 to 20 carbon atoms

[R^6 and J represents the mean as defined in claim 7], and

all of plural R^4s are same as or different from each other, and each of plural R^4s represents a hydrocarbon group which may have a substituent and which has 1 to 30 carbon atoms or represents a siloxy group which may have a substituent and which has 1 to 200 silicon atoms,

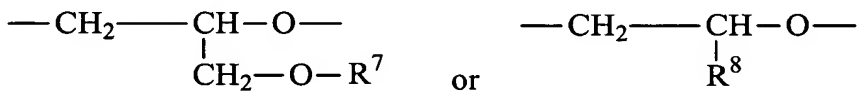
G represents an alkylene group, which may have a substituent and which has 1 to 20 carbon atoms, or an arylene group

b represents a number selected from 1 to 500 as an average value of plural numbers or represents an integer of 1 to 20 as a single number, and

p represents a number selected from 0 and 1

[R^4, G, b and p represent the mean as defined in claim 4],

Y represents

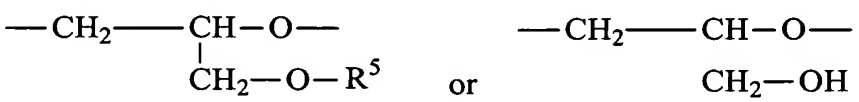


, represents a group represented by X (provided the case in which X and Y are the same is excluded), or represents a group originated from an anionic-polymerizable monomer other than the substituted epoxide, in which case Y may be plural types,

in which R^7 represents a hydrocarbon group having 1 to 7 carbon atoms or represents a trialkyl (an alkyl group has 1 to 4 carbon atoms) silyl group,

R^8 represents a hydrogen atom or represents a hydrocarbon group or halogen-substituted hydrocarbon group having 1 to 22 carbon atoms,

f represents a number of 150 or more when X is



and represents a number of 5 or more when X is the other group, and g represents a number being 5 or more.--

--Claims 12-25 are new.--